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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/821,335 | 03/29/2001 | Lasse Wengel Christoffersen | 287980/0005 | 5354 |

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EXAMINER

ASSAF, FAYEZ G

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,335

Applicant(s)

CHRISTOFFERSEN ET AL.

Examiner

Fayez G. Assaf

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-59 is/are pending in the application.
- 4a) Of the above claim(s) 37 and 53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-36, 38-52, 54-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2872

DETAILED ACTION

Election/Restrictions

This application contains claims 37 and 53, which are drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Remark

Applicant has noted that the rejection under 35 U.S.C. § 102 (e) is improper, since Feldman was issued as a U.S. Patent before the filing date of the present application.

The Examiner asserts that the rejection is proper under 35 U.S.C. § 102 (e), because the filing date of the present application is 03/21/2001 and the publication date of Feldman reference is 5/9/2000.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

Art Unit: 2872

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 34, 36, 41-44, 46, 47-49, 51, 52, 54, 55 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by Feldman et al. (US 6,061,169).

Regarding claims 34, 36, 41, 48, 49, 51, 52, 54, Feldman discloses an optical system, comprising a plurality of stacked optical sheets (see Fig. 7) including at least one optical element replicated on a surface, wherein an optical path within the plurality of stacked sheets passes from a first optical element on a first optical sheet (9 of Fig. 7) to a first three-dimensional optical element on a second optical sheet (73 of fig. 70 and to a second transmissive diffractive micro-structured optical element on the first optical sheet (71 of Fig. 7), wherein the optical path further passes from the second optical element on the first optical sheet to a second optical element (75 of Fig. 7) on the second optical sheet.

Art Unit: 2872

Regarding claims 42, 43, 55 and 59, Feldman discloses one or more integrated spacers (25 of Fig. 7) interposed within the stack of optical sheets.

Regarding claim 46 and 47, Feldman discloses at least one active optical element (63 of Fig. 7) and at least one passive optical element (lens 73 of Fig. 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35, 38-40, 45, 50 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman et al. (US 6,061,169) in view of Herzig (Micro-Optics Elements, systems and applications, published by Taylor & Francis, copyright date 1997).

Regarding claims 35, 38-40 and 56-58, Feldman discloses the claimed invention except for the height of the micro-structured element or the three-dimensional optical element. However,

Art Unit: 2872

Herzig discloses methods of replication of micro optical elements having *typical* heights ranging from 1 μm to over 1 *mm*, (line 1 to line 33 of page 156; line 3 to line 9 of page 169).

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to utilize the replication methods of Herzig to obtain such micro optical elements, because the methods are suitable for mass production. Additionally, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ.

Regarding claims 45 and 50, Feldman discloses the claimed invention except for the first and second optical elements on the first optical sheet being on a first surface of the first optical sheet.

However, rearranging optical parts to allow for flexibility in design is normally achieved by routine experimentation.

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to arrive at such structures, since it has been held to that rearranging parts of an invention involves only routine skill in the art. In re Janise, 86 USPQ 70.

Response to Arguments

Applicant's arguments filed 3/17/2003 have been fully considered but they are not persuasive.

Regarding claim 34, 36, 41-44, 46, 47-49, 51, 52, 54, 55 and 59, the Applicant essentially argues the following: first, Feldman fails to teach "a single surface that is replicated with both a micro-structured optical element and at least one three-dimensional element." The Examiner agrees; however, this language is quite different from the language of independent claim 34. In particular, claim 34 has been interpreted to mean *one optical sheet including a surface replicated with a micro-structured optical element and [including] at least one three-dimensional optical element*. The language of the claim does not require the two elements being on one single surface. Secondly, the Applicant argues that Feldman fails to teach "*an optical system that has an optical path that leads from a first element on the first sheet to a first element on the second sheet and to a second element on the first sheet*." The Examiner respectfully disagrees, because the language of independent claim 48, broadly interpreted, does not require the optical path to lead **from** the first element on the second sheet to the second element on the first sheet.

Art Unit: 2872

Regarding claims 35, 38-40, 45, 50, 56-58, the Applicant essentially argues that the reference to Herzig teaches away from the idea of combining the replication of large scale and small scale structures on same surface, although the structures of both high resolution and large dimension may each be molded individually. The Examiner notes that the Applicant has mischaracterized the 103 rejection, because the language of the claims does not require in any **single** claim both replicating micro-scale structure with "large scale structure" on one single surface. The recitation that the optical sheet includes a three-dimensional optical element cannot be interpreted in terms of specific values, because every optical element taught by Feldman is a three-dimensional element. Similarly, the recitation with respect to the "micro-structure" is not inclusive of specific values, although the order of magnitude is obvious to one of ordinary skill in the art. Additionally, the language of the claims does not require both structures being formed on one single surface.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2872

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fayez Assaf whose telephone number is (703) 306-5526. The fax number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

FA

Fayez Assaf

6/2/03

John Juba
JOHN JUBA
PRIMARY EXAMINER